

Stress: A Risk Factor For Psoriasis, Vitiligo And Alopecia Areata

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Abstract

Background: The possibility of an influence of stress especially of stressful life events on the course of various skin diseases has long been postulated.

Objectives: The aim of this study was to determine the effect of stressful life events on the onset and on the state of the psoriasis, vitiligo and alopecia areata.

Design: The design of study was case-control study.

Setting: Cases and controls were selected from Basrah General Hospital (BGH), Sadder Teaching Hospital (STH) and private clinic of dermatology (P.C) in Basra, Iraq.

Methods: The total number of cases was 283 patients in which of psoriasis, vitiligo and alopecia areata constituted 98,87 and 98 patients respectively while total number of controls was 242 patients have dermatological diseases other than cases. All cases and controls were matched on the bases of their similarity with respect to age and sex.

Results: The influence of stress factor have been postulated on the course of psoriasis, vitiligo and alopecia areata. High percentage of patients with vitiligo (54.0%) and alopecia areata (62.2%) mentioned stress as cause of their disease. Statistically this was significant for vitiligo ($P= 0.01708$) and highly significant for alopecia areata ($P= 0.00012$) but not on psoriasis ($p=0.656$). It was also found that stress made the state of disease worse only to be highly significant in psoriasis ($P= 0.00288$) and significant in alopecia areata ($P= 0.02141$), $OR = 1.739$ and 95% CI of $OR= 1.08-2.79$) but not on vitiligo ($p=0.10589$).

Conclusion: The study confirmed that significant association were detected between stress factor and each of psoriasis, vitiligo and alopecia areata

INTRODUCTION

The clinical wisdom and experience, as well as many observations and studies support the possibility of an influence of stress events on the course of many skin diseases. The role of stressful life events in triggering or exacerbating of vitiligo, psoriasis, and alopecia areata was apparently clearer [1,2,3,4,5,6,7,8]. Nevertheless, the specific pathogenic role of psychological stress remains unknown [9,10,11,12].

Several studies assessing stressful life events have been conducted and seem to confirm that stress may trigger the

disease. The early onset of psoriasis (<40 years) was associated more frequently with psychological factors, such as stress [2,5,6]. Patients with skin diseases stating that their disease worsened at time of psychological stress [2,3,4,9].

A recent studies which measured the frequency and number of stressful life events occurring over a specified period among vitiligo and alopecia areata suggested that such patients endured a significantly higher number of stressful life events than do controls suggesting that psychological distress may have contributed to the onset of vitiligo and alopecia areata [7,8]. Much clinical evidence suggests that the

nervous system, including psychological factors, can influence the course of alopecia areata [10,11]. This effect may be mediated by corticotropin-releasing hormone (CRH) released locally in the skin from dorsal root ganglia or immune cell leading to intense local inflammation [12].

PATIENTS AND METHODS

The eligibility criteria required for diagnosis of cases and controls in our study consist of combination of symptoms and signs. Cases and controls were selected from Department of dermatology of Basrah General Hospital and Sadder Teaching Hospital also from private clinic. All cases and controls were matched on the bases of their similarity with respect to age and sex. The total number of cases was 283 patients of which psoriasis, vitiligo and alopecia areata constituted 98,87 and 98 patients respectively while total number of controls was 242 patients have skin diseases other than in the cases.

The information were obtained through direct communication by personal interview .The result were represented in simple tables and for the purpose of estimation of risk it was carried out by calculation of X²,OR,and 95% CI of OR.

RESULTS

The total number of cases was 283 patients 137 (48.4 %) were males and 146 (51.6 %) were females, while controls were 242 patients, 116 (47.9) were females and 126 (52.1 %) were females [Table-1] . The commonest skin diseases of controls were bacterial infections 47 (19.4%) followed by dermatitis/ eczema 30 (12.4 %).

Figure 1

Table 1: The distribution of cases and controls according to their sources and sex.

Cases	Sources *			Sex		Total
	BGH	STH	PV	Males	Females	
Psoriasis	45	24	29	47	51	98
Vitiligo	36	19	32	41	46	87
Alopecia areata	34	24	40	49	49	98
Total	115	87	101	137 (48.4)	146 (51.6)	283
Controls	112	59	71	116(47.9)	126 (52.1)	242

*BGH -Basrah General Hospital
 *STH- Sadder Teaching Hospital
 *PV- Private clinic

High percentage of patients with vitiligo (54.0%) and alopecia areata (62.2%) mentioned stress as cause of their disease. Statistically this was significant for vitiligo (P= 0.01708, OR = 1.818 and 95% CI of OR=1.11-2.98) and

highly significant for alopecia areata (P= 0.00012, OR= 2.551,and 95%CI of OR= 1.57-4.14), but not on psoriasis (p=0.65999, OR=1.113 ,CI= 0.69-1.79) [Table 2] .

Figure 2

Table 2: The frequency of stress factor as a cause of disease according to patients perception among cases and controls .

Stress	psoriasis		vitiligo		Alopecia areata		controls	
	No.	%	No	%	No.	%	No.	%
Yes	41	41.8	47	54.0	61	62.2	95	39.3
No	57	58.2	40	46.0	37	37.8	147	60.7
X ²	0.19345		5.68817		14.8459			
P	0.65999		0.01708		0.00012			
OR*	1.113		1.818		2.551			
95% CI**	0.69-1.79		1.11-2.98		1.57-4.14			

*OR = Odds ratio
 **95% Confidence intervals of odds ratio

It was found that stress made the state of disease worse only to be highly significant in psoriasis (P= 0.00288, OR-2.049 and 95% CI of OR= 1.27-3.30) and significant in alopecia areata (P= 0.02141, OR =1.739 and 95% CI of OR= 1.08 -2.79) but not on vitiligo (P=0.10589 ,OR= 0.646 ,CI =0.38 -1.1) [Table -3] .

Figure 3

Table 3: The distribution of cases and controls according to effect of stress on the state of the skin diseases

State of diseases	Psoriasis		Vitiligo		Alopecia Areata		controls	
	No.	%	No	%	No	%	No	%
Worse	55	56.1	25	28.7	51	52.0	93	38.4
No change	43	43.9	62	71.3	47	48.0	149	61.6
X	8.882709		2.614464		5.292805			
P	0.00288		0.10589		0.02141			
OR*	2.049		0.646		1.739			
95%CI**	1.27-3.30		0.38-1.1		1.08-2.79			

*OR == Odds ratio
 **95% Confidence intervals of odds ratio

DISCUSSION

There are multiple risk factors for most of skin diseases and often the risk factors are correlated with each other. Case-control is one of the analytic epidemiological method to test risk factors with respect to the occurrence of specific diseases [13].

The study showed that 54% of patient with vitiligo and 62.2% of patient with alopecia areata mentioned that stress was a cause of their disease with significant difference. Also it was showed that 56.1% of psoriasis and 52.0% of alopecia areata patients reported that the state of their diseases became worse which was statistically significant. Our result agreed with other studies [1,2,3,4,5,6,7,8]. The result of this study was consistent with previous studies which suggested that stress may be an important precipitating factors in onset

or in exacerbation of alopecia areata [8,10,11,12].

According to patient consideration 54% of patients with vitiligo claimed stress as a cause of the disease. This finding consistent with a retrospective study in London which examined the role of stressful life events in the onset of vitiligo in adults, which suggested that such patients endure a significantly high number of stressful events than controls [7].

Several studies assessing stressful life events have been conducted and seem to confirm that stress may trigger the disease. The early onset of psoriasis (< 40 years) was associated more frequently with psychological factors, such as stress [2,3,4,5,6].

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